

OFFICIAL

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Scherer et al.

Serial No.: 10/650,370

Filed: 8/28/2003

Docket: 2001DE313/D

Group Art Unit: 1621

Examiner: Vollano, Jean F.

PATENT

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MAR 23 2004

For: Process for Preparing Bisallyboranes and Nonaromatic Boronic Acids

RESPONSE TO RESTRICTION REQUIREMENT AND AMENDMENT

Mail Stop: Non Fee Amendment  
Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

In response to the Office Action mailed February 26, 2004, please enter the following Amendment and Election.

CERTIFICATE OF MAILING/TRANSMISSION (37 CFR 1.8a) and 1.10

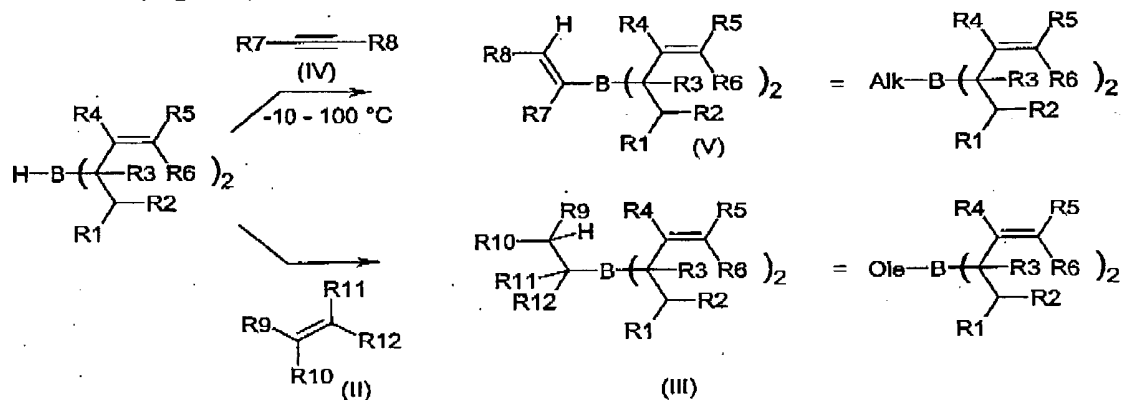
I hereby certify that this correspondence is, on the date shown below, being transmitted by facsimile to the Commissioner for Patents. (Fax No. (703) ~~208-7751~~ **872-9306**)  
~~Initial Patent Examination Division~~ (6 pages)  
~~CENTRAL FAX No.~~

Vicki L. Sgro:

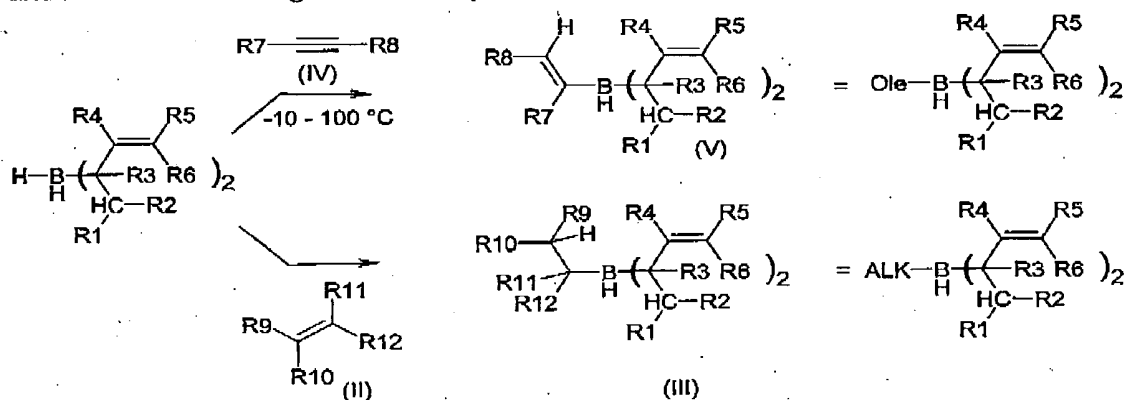
Date: March 23, 2004

Amendment to the Specification

On page 3, please delete the following reaction sequences:



and insert the following reaction sequences:



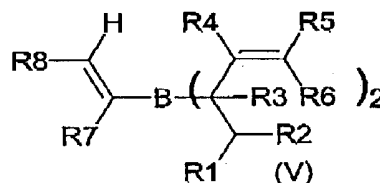
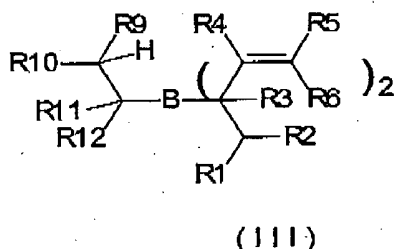
Amendments to the Claims

1. through 7. (Cancelled)

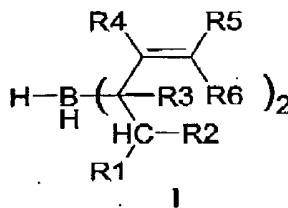
8. (Withdrawn) Di(1-1-isopropyl-3-methylbut-2-enyl)borane of the formula (Ia).

9. (Withdrawn) A bis(allyl)borane of the formula (I) obtainable by a process as claimed in claim 1.

10. (Withdrawn) A Suzuki coupling reaction product obtained through use of a bis(allyl)borane of the formula (III) or (V) in C-C coupling reactions

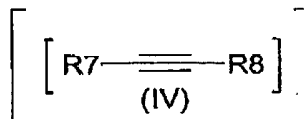
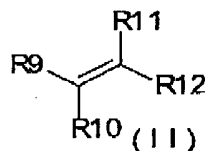


11. (Currently Amended) A process for preparing boronic acids by reaction of a bisallyl alkylboronate comprising the steps of reacting a diene with sodium borohydride in the presence of an oxidant to form the corresponding bis(allyl)borane of the formula (I) as described in claim 1

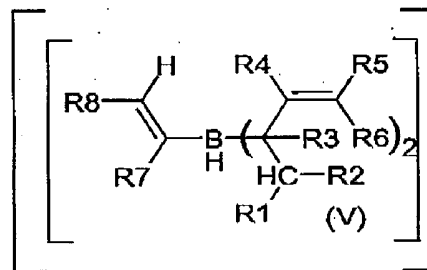
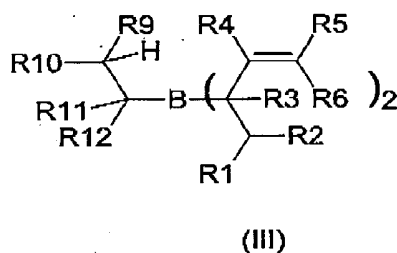


where R<sup>1</sup>-R<sup>6</sup> are H, aryl or substituted or unsubstituted C<sub>1</sub>-C<sub>4</sub>-alkyl or two radicals R may be closed to form a cyclic system.

and further ~~reaction of reacting~~ the borane (I) with an appropriate alkene (II) or alkyne (IV) to give the



alkylbis(allyl)borane (III) or alkenylbis(allyl)borane (V)



wherein  $R^9$  to  $R^{12}$  are selected from the group consisting of aryl, substituted or unsubstituted, alkyl-(C<sub>1</sub>-C<sub>8</sub>), branched and/or substituted alkyl-(C<sub>1</sub>-C<sub>8</sub>), alkoxy-(C<sub>1</sub>-C<sub>8</sub>), acyloxy-(C<sub>1</sub>-C<sub>8</sub>), Ophenyl, fluorine, chlorine, NO<sub>2</sub>, NH<sub>2</sub>, NHalkyl-(C<sub>1</sub>-C<sub>8</sub>), Nalkyl<sub>2</sub>-(C<sub>1</sub>-C<sub>8</sub>), CN, CHO, SO<sub>3</sub>H, SO<sub>3</sub>R, SO<sub>2</sub>NH<sub>2</sub>, SO<sub>2</sub>N(alkyl-(C<sub>1</sub>-C<sub>8</sub>))<sub>2</sub>, SO<sub>2</sub>-alkyl-(C<sub>1</sub>-C<sub>8</sub>), COO-alkyl-(C<sub>1</sub>-C<sub>8</sub>), CONH<sub>2</sub>, CO-alkyl-(C<sub>1</sub>-C<sub>8</sub>), NHCHO, CF<sub>3</sub>, 5-membered heteroaryl and 6-membered heteroaryl, where two radicals may also form a cyclic ring system which may contain heteroatoms.

~~which is oxidized and oxidizing~~ directly in the presence of an oxidant to form the corresponding bisallyl alkylboronate ~~or alkenylboronate and, if desired, subsequent conversion into a derivative.~~

12. (Cancelled)

13. (Original) The process as claimed in claim 11, wherein the oxidant used is formaldehyde, acetone, glyoxal or diacetyl.

14. (Withdrawn) A Suzuki coupling reaction product obtained by using bis(allyl) alkylboronate or alkenylboronate produced as claimed in claim 11 in C-C coupling reactions.

**REMARKS**

The Office has imposed a restriction requirement against the present application under 35 USC § 121. For prosecution in this Application, applicants elect Group IV, claims 11-13 (in part), as amended, without traverse.

In the Office Action, the Office stated that with respect to claim 11, the product is not a boronic acid. Applicants have amended the claim 11 to recite a process for preparing bisallyl alkylboronate. Claim 12 has been cancelled.

The Office also requires Applicants to elect a species as a "starting place for the search". For prosecution in this application, Applicants elect the species disclosed in Example 9: 4,4,5,5-Tetramethyl-2-phenethyl-1,3,2-dioxaborolane. Applicants reserve the right to the consideration of additional species upon the allowance of a generic claim.

Applicants have also amended the specification to correct an inadvertent typographical error in that the products listed in the reaction sequences had the olefin and alkyl groups reversed.

Respectfully submitted,



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